

(7.5) Using Trig Ratios to Determine Side Length & Angle Measure

Example 1: Solve for x to 1 decimal places.

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$\sin 45^\circ = \frac{O}{H} = \frac{1}{x}$
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 $x = \frac{1}{\sin 45^\circ}$
 $x = \frac{1}{0.7071}$
 $x = 1.4$

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Example 2: Solve for x to the nearest degree.

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$\cos x = \frac{A}{H} = \frac{6}{8}$
 $\cos x = 0.7500$
 $x = \cos^{-1}(0.7500)$
 $x = 41^\circ$

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Example 3: A wheelchair ramp 8.2 m long rises 94 cm. Find its *angle of inclination* to the nearest degree.

HINT: Start with a diagram!

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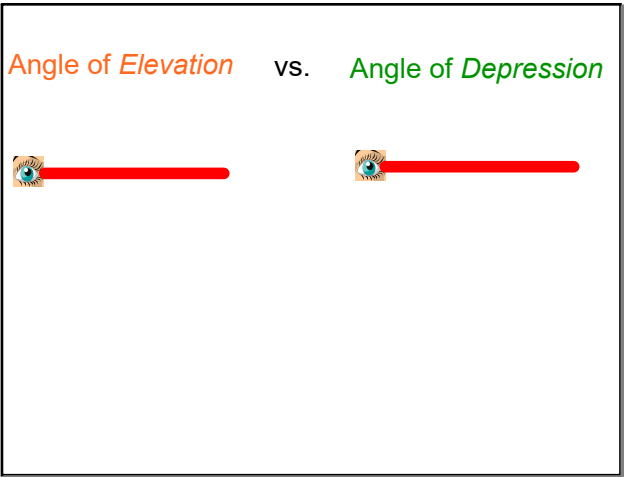
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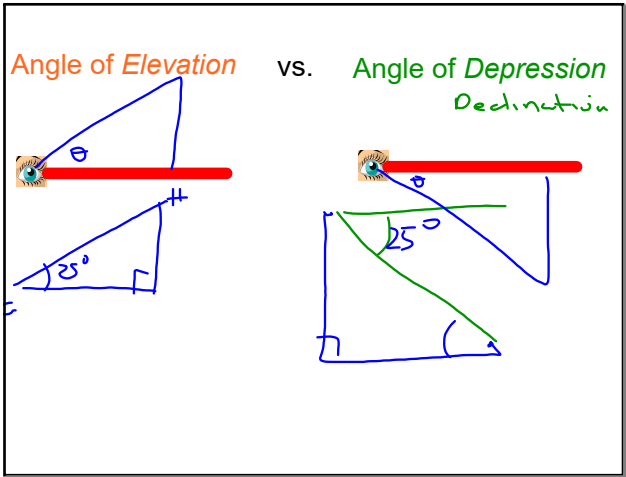
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$\tan \theta = \frac{O}{A} = \frac{94}{820}$
 $\tan \theta = 0.1146$
 $\theta = \tan^{-1}(0.1146)$
 $\theta = 7^\circ$

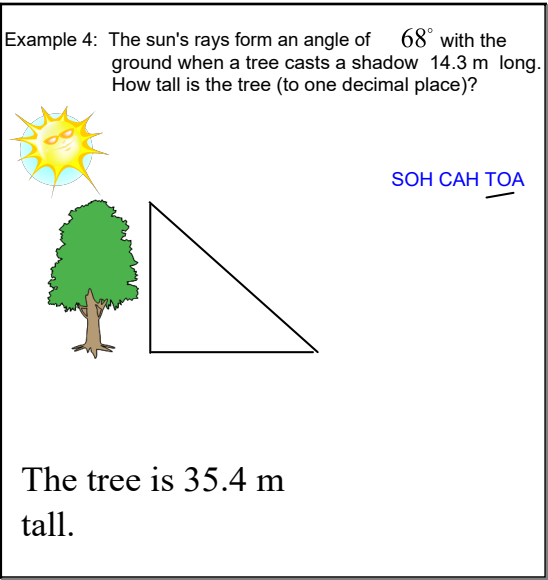
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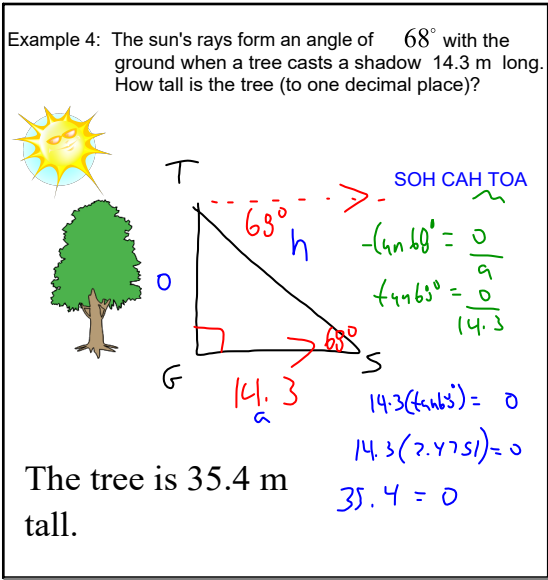
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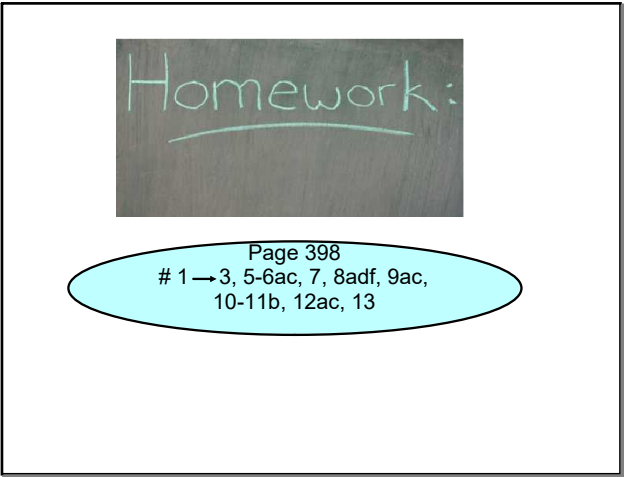
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